

Appl. No. 10/734,7653
Amdt. Dated August 10, 2005
Reply to Office Action of May 16, 2005

AMENDMENTS TO THE SPECIFICATION:

Please replace paragraph [0018] with the following amended paragraph:

[0018] ~~Figure 5 shows~~ Figures 5A and 5B show a partial view of a constant velocity joint in accordance with alternative embodiments of the present invention.

Please replace paragraph [0037] with the following amended paragraph:

[0037] Figure 5A shows a partial view of a constant velocity joint in accordance with an alternative embodiment of the present invention. In this embodiment, there is a tuned energy absorption surface 86, which is a track surface 88. The track surface 88 has a taper 90 and is longitudinally located in the outer extended axial range E of an outer ball track 60 of the outer joint part 50. There can be one or more track surfaces 88 located on anyone of the other outer ball tracks 60. The taper 90 may extend linearly over the outer extended axial range E as shown in the layout view of Figure 6. Alternatively, the track surface may have a variable taper or a stepped taper of increasing or decreasing size (Figure 5B). Thus, when the connecting shaft 44 along with the inner joint part 52, the torque transmitting balls 56, and the ball cage 54 are thrust, as a result of an unintended force, such as a crash, beyond the normal axial range N and into the outer extended axial range E of the joint 11, the torque transmitting balls 56 will interfere with or be impeded by the track surface 88. The impediment of the track surface 88 causes an increase in the thrust required for axial motion allowing energy to be absorbed by the constant velocity joint 11 and the propeller shaft 26. The track surface 88 can be tuned to achieve different force levels, allowing for the design of a controlled energy absorption profile within the constant velocity joint 11. The tuning may be accomplished by changing the size, the shape, the material, or the location of the track surface 88. The circlips 76 is combined with the track surface 88 as shown in Figure 5A is optional and is not required.

Please replace paragraph [0038] with the following amended paragraph:

[0038] In addition or in the alternative, the track surface 89 having a taper 91 is longitudinally located in the inner extended axial range IE of an inner ball track 61 of the inner joint part 52. There can be one or more track surfaces 89 located on anyone of the other inner ball tracks 61. The taper 91 may extend linearly over the inner extended axial range IE as shown in the layout view of Figure 7. Alternatively, the track surface may have a variable taper or a stepped taper of increasing or decreasing size (Figure 5B). Thus, when the connecting shaft 44 along with the inner joint part 52, the torque transmitting balls 56, and the ball cage 54 are thrust, as a result of an unintended force, such as a crash, beyond the normal axial range N and into the inner extended axial range IE of the joint 11, the torque transmitting balls 56 will interfere with or be impeded by the track surface 89. The impediment of the track surface 89 causes an increase in

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the thrust required for axial motion allowing energy to be absorbed by the constant velocity joint 11 and the propeller shaft 26.

Please replace paragraph [0039] with the following amended paragraph:

[0039] Thus, under normal operating conditions, the torque transmitting balls 56 will operate in the normal axial range N of the constant velocity joint 11. In certain crash situations, however, the connecting shaft 44 along with the inner joint part 52, the ball cage 54 and the torque transmitting balls 56 will be thrust toward the hollow shaft 42 allowing track energy to be absorb along the outer extended axial range E and or the internal extended axial range IE caused by the impediment of the track surface 88, 89 upon the outer joint part 50 or inner joint part 52, respectfully. As is evident from the figures, the track surfaces 88, 89 may also interfere with the ball cage 54 in the extended ranges E, IE.

Please replace paragraph [0040] with the following amended paragraph:

[0040] The one or more track surfaces 88, 89 the one or more circlips 76, the one or more inner energy absorption surfaces 81 and the one or more bore surfaces 82 are combinable to achieve a controlled and tuned energy absorption rate when the constant velocity joint 11 is operated beyond the normal axial range N. The track surfaces 88, 89 may be made from the same material piece as the outer joint part or inner joint part.